

WHAT IS CLAIMED IS:

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1. An isolated infectious respiratory syncytial virus particle which comprises an respiratory syncytial virus antigenome or genome containing at least one functional deletion in a viral accessory gene.
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2. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing an M2-2 gene mutation.
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3. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing an SH gene mutation.
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4. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing an NS1 gene mutation.
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5. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing an NS2 gene mutation.
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6. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing both an M2-2 gene mutation and an SH gene mutation.
7. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing both an M2-2 gene mutation and an NS1 gene mutation.
8. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing both an

M2-2 gene mutation and an NS2 gene mutation.

9. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing both an NS1 gene mutation and an NS2 gene mutation.

10. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing both an NS1 gene mutation and an SH gene mutation.

11. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing both an NS2 gene mutation and an SH gene mutation.

12. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing an NS1 gene mutation, an NS2 gene mutation and an SH gene mutation.

13. An isolated infectious respiratory syncytial virus particle having an attenuated phenotype comprising a respiratory syncytial virus antigenome or genome containing an M2-1 gene mutation.

14. The isolated infectious respiratory syncytial virus particle of Claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 or 13 which further comprises a heterologous sequence.

15. The recombinant RNA molecule of Claim 14 in which the heterologous sequence is derived from the genome of another strain of respiratory syncytial virus.

16. The recombinant RNA molecule of Claim 14 in which the heterologous sequence is derived from the genome of a virus other than respiratory syncytial virus.

17. A vaccine comprising a respiratory syncytial virus, the genome of which contains

the reverse complement of an mRNA coding sequence operatively linked to a polymerase binding site of a respiratory syncytial virus, and a pharmaceutically acceptable carrier.

5 18. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of the complete M2-2 gene.

19. The vaccine of Claim 17 in which the mRNA coding sequence contains a mutagenized M2-1 gene.

10 20. The vaccine of Claim 19 in which the M2-1 gene is mutagenized by cysteine scanning mutagenesis.

21. The vaccine of Claim 19 in which the M2-1 gene is mutagenized by C-terminal truncation of the M2-1 protein.

15 22. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of the complete SH gene.

20 23. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of the complete M2-2 gene.

24. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of the complete NS1 gene.

25 25. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of the complete NS2 gene.

26. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of both the complete M2-2 gene and the complete SH gene.

30 27. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of both the complete M2-2 gene and the complete NS1 gene.

28. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of both the complete M2-2 gene and the complete NS2 gene.

29. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of both the complete NS1 gene and the complete NS2 gene.

30. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of both the complete M2-2 gene and the complete SH gene.

31. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of both the complete NS1 gene and the complete SH gene.

32. The vaccine of Claim 17 in which the mRNA coding sequence contains a deletion of the complete NS1 gene, the complete NS2 gene and the complete SH gene.

33. The vaccine of Claim 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 or 32 which further comprises a heterologous sequence

34. The vaccine of Claim 33 in which the heterologous gene is derived from the genome of influenza.

35. A pharmaceutical composition comprising the attenuated vaccine of Claim 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 or 29.

Add C1

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